

## The “ANG (Anghileri) Technique”: Making Derotation Easy

One of the main goals of the initial phase, when working with passive self-ligating Damon brackets, is to control rotation during alignment. Delays in reaching this goal can slow down the treatment process.

If a tooth is slightly rotated, CuNiTi initial archwires allow doctors to achieve a complete correction in the first few months. (Fig. 1)



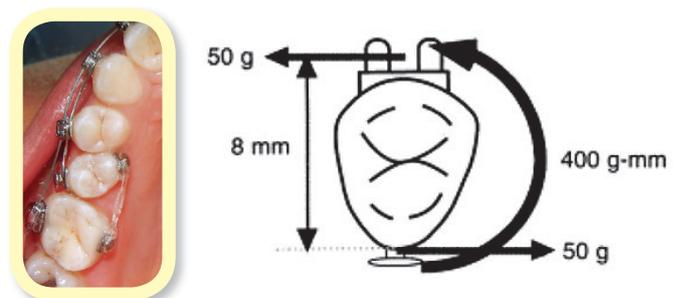
■ Fig. 1: Sequence of correcting rotated upper cuspids.

When an archwire can't be engaged due to a large degree of tooth rotation, the Couple Technique, which states that two forces equal in magnitude and opposite in direction can produce a pure rotation, spinning the object around its center of resistance, is effective in solving this problem.

The Couple Technique is applied in this case by bonding two buttons on the buccal and palatal surfaces of the bicuspid and molar (Fig. 2). Despite its effectiveness in derotation, this technique can be very uncomfortable for some patients.

The “ANG Technique” was invented by Dr. Matías Anghileri from Argentina to provide an effective and

comfortable solution to address this problem. First, place the initial archwire and bond a button on the buccal surface of the rotated tooth. Second, insert a passive spring between the two teeth surrounding the rotated tooth. Third, use a ligature from the button to compress the spring approximately a

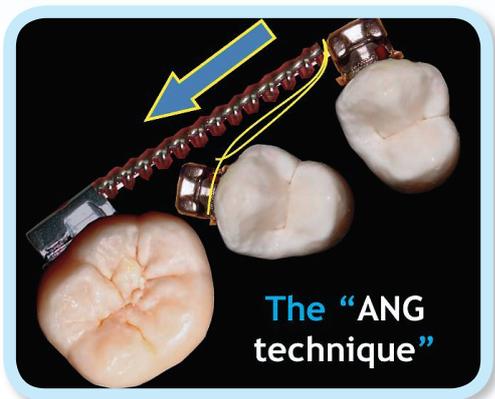


■ Fig. 2: The application of the Couple Technique



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third of its original length. An easy way to do this is by placing the ligature through the first or second coil (Fig. 3). The spring can then exert its force in the same direction to which the tooth must be rotated.

In this article two cases are presented to illustrate the application of the ANG technique. In this first case (Fig. 4), the bicuspid is rotated distally; therefore, the spring should be compressed to provide a constant mesial light force towards the rotated bicuspid (Fig. 4). The spring works continuously to derotate the tooth without adjusting the ligature.

Once the tooth is rotated enough to be engaged in the main archwire, it's ready for bonding. It's noted that a space is created as the tooth derotates since a rotated posterior tooth occupies more space than a well-aligned one. Finally, the total correction is achieved after three months (Fig. 5).

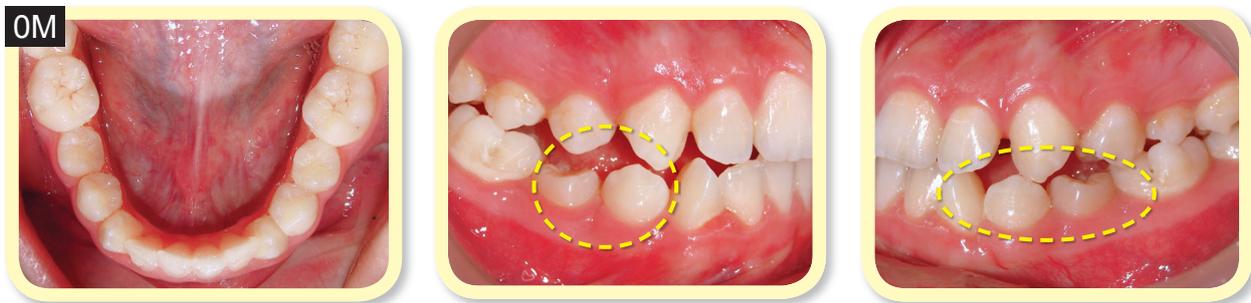
■ **Fig. 3:**  
ANG Technique: Compressing a coil spring to  $\frac{1}{3}$  of its length by inserting a ligature.



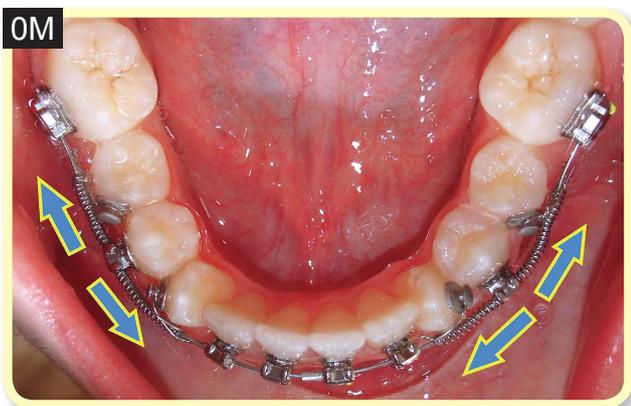
■ **Fig. 4:** ANG Technique: Compressed spring



■ Fig. 5: ANG Technique: Creating space and derotating before alignment.



■ Fig. 6: ANG Technique: Four rotated teeth highlighted by dotted circles.



■ Fig. 7: ANG Technique: Directions of forces.

In the second case there are four teeth severely rotated. As a result alignment usually takes several months (Fig. 6).

The ANG Technique is applied to the lower cuspids and the second lower bicuspid simultaneously. The tooth where the spring is going to be anchored must have a greater anchorage than the rotated one to avoid an unwanted rotation.



■ Fig. 8: ANG Technique: Bonding the brackets.



■ Fig. 9: ANG Technique: Alignment.

With the ANG technique the directions of the forces of the compressed springs rotate the bicuspids distally and the cuspids mesially (Fig 7).

Two months later, there is enough space to directly engage these four teeth with a .013" CuNiTi wire. The ANG Technique doesn't interfere with the incisors and anterior guidance is undisturbed. (Fig. 8). After 3.5 months the teeth are in a good alignment (Fig. 9).

Controlling tooth rotation does not have to involve complex mechanics that may prolong treatment time. The “ANG (Anghileri) technique” employs simplified and yet effective mechanics to solve tooth rotation without sacrificing patient comfort.

